Type 2 Diabetes Drug Class Comparison

T2DM Drug Class	Mechanism	Route	A1C Lowering*	Hypoglycemia Risk	Weight Effect*	Cost
Biguanides (metformin)	Decreases hepatic production of glucose; increases insulin sensitivity	Oral	●●●	No	Potential for weight loss	$
SGLT2 inhibitors	Increases urinary glucose excretion	Oral	●●	No	Weight loss	$$$
GLP-1 receptor agonists	Increases glucose-dependent insulin release; decreases glucagon secretion; slows gastric emptying	SQ/Oral	●●●●**	No	Weight loss**	$$$$
GLP-1/GIP receptor agonists (e.g. tirzepatide)	Increases glucose-dependent insulin release; decreases glucagon secretion; slows gastric emptying	SQ	●●●●●	No	Weight loss	$$$$$
DPP-4 inhibitors	Increases glucose-dependent insulin release; decreases glucagon secretion	Oral	●	No	Neutral	$$$
Thiazolidinediones	Increases insulin sensitivity in muscle, fat and liver cells; increases glucose entry into cells	Oral	●●	No	+ Weight gain	$^
Sulfonylureas	Stimulates insulin secretion from pancreatic beta cells	Oral	●●●	Yes	+ Weight gain	$
Insulin Analogs	Stimulates peripheral glucose uptake by skeletal muscle and fat tissue; inhibits hepatic glucose production	SQ	●●●●● Titrate to response	Yes	+++ Weight gain	$$$
Human Insulin		SQ/Inhaled				$

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SQ = subcutaneous

* The extent of A1C lowering and weight change is highly variable based upon factors including but not limited to baseline A1C, baseline weight, patient-specific characteristics, lifestyle modifications, and whether monotherapy or a multi-drug regimen is being utilized.

** The GLP-1 receptor agonists dulaglutide and subcutaneous semaglutide have notably greater A1C-lowering efficacy and weight loss effects than other GLP-1 receptor agonists.

^ Pioglitazone is generic and has low cost; however, rosiglitazone (Avandia®), which is currently unavailable in the U.S., is not available as a generic.

References: (1) American Diabetes Association Professional Practice Committee. American Diabetes Association. Standards of Care in Diabetes - 2024. Diabetes Care 1 January 2024; 47 (Suppl. 1): S1–S321. (2) Individual manufacturer product labels.